

## Remarks

### 1. Summary of the office action

In the office action mailed April 1, 2009, (i) the Examiner rejected claims 1, 9, 10, 12-14, 18, 22, 23, 27-29, 32, 35, 40, 41, 47, 48, and 56 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,208,247 B1 (Agre), U.S. Patent No. 5,483,287 (Kulka), and U.S. Patent No. 5,095,532 (Ito), (ii) the Examiner rejected claims 2-4, 11, and 45 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and U.S. Patent No. 5,420,825 (Fischer), (iii) the Examiner rejected claim 16 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, *A Self Organizing Wireless Sensor Network* (Sohrabi), and U.S. Patent No. 6,028,857 (Poor), (iv) the Examiner rejected claims 20 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and U.S. Patent No. 6,615,088 B1 (Myer), (v) the Examiner rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and U.S. Patent No. 5,742,829 (Davis), (vi) the Examiner rejected claim 30 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and U.S. Patent No. 6,233,610 B1 (Hayball), (vii) the Examiner rejected claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, Hayball, and Sohrabi, (viii) the Examiner rejected claim 33 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and U.S. Patent No. 6,414,955 B1 (Clare), (ix) the Examiner rejected claims 34 and 36-38 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and U.S. Patent No. 6,236,365 B1 (LeBlanc), (x) the Examiner rejected claims 43 and 46 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and U.S. Patent No. 6,809,653 B1 (Mann), (xi) the Examiner rejected claim 49 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and U.S. Patent No. 5,203,199 (Henderson), (xii) the Examiner rejected claims 50-52 and 60 under 35 U.S.C. § 103(a) as being unpatentable over

Agre, Kulka, Fischer, and U.S. Patent No. 5,617,371 (Williams), (xiii) the Examiner rejected claim 53 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Fischer, Williams, and U.S. Patent No. 4,494,121 (Walter), (xiv) the Examiner rejected claims 57-59 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Fischer, Williams, and U.S. Patent No. 6,437,692 (Petite), and (xv) the Examiner stated claim 61 is objected to for being dependent upon a rejected base claim.

**2. Claim amendments and status of the claims**

Applicant has amended claims 1, 12, 14, 16, 18, 28, 30-33, 40, 41, 45, 48-50, 58, and 60, and cancelled claims 54, 55, 61, and 62. Claims 1-4, 9-14, 16, 18, 20-24, 27-38, 40, 41, 43, and 45-53, and 56-60 are pending. Of the pending claims, claims 1 and 50 are independent.

**3. Response to claim rejections under 35 U.S.C. § 103(a)**

**a. Claims 1, 9, 10, 12-14, 18, 22, 23, 27-29, 32, 35, 40, 41, 47, 48, and 56**

The Examiner rejected claims 1, 9, 10, 12-14, 18, 22, 23, 27-29, 32, 35, 40, 41, 47, 48, and 56 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, and Ito. Of these claims, claim 1 is independent. Applicant submits that claim 1, as amended, patentably distinguishes over Agre, Kulka, and Ito.

At a minimum, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended.

Because Agre, Kulka, and Ito do not reasonably lead to each and every limitation of claim 1, Agre, Kulka, and Ito do not render claim 1 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claim 1 is in condition for allowance.

Further, since each of claims 2-4, 9-14, 16, 18, 20-24, 27-38, 41, 43, 49, and 56 depends from claim 1, each of claims 2-4, 9-14, 16, 18, 20-24, 27-38, 41, 43, 49, and 56 necessarily includes each and every limitation recited in claim 1. Without conceding the Examiner's assertions regarding claims 2-4, 9-14, 16, 18, 20-24, 27-38, 41, 43, 49, and 56, Applicant submits that Agre, Kulka, and Ito do not render claims 2-4, 9-14, 16, 18, 20-24, 27-38, 41, 43, 49, and 56 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claims 2-4, 9-14, 16, 18, 20-24, 27-38, 41, 43, 49, and 56 are in condition for allowance.

**b. Claims 2-4, 11, and 45**

The Examiner rejected dependent claims 2-4, 11, and 45 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and Fischer. Since each of claims 2-4, 11, and 45 depends from claim 1, each of claims 2-4, 11, and 45 necessarily includes each and every limitation recited in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended. Applicant submits that Fischer fails to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, and Fischer do not reasonably lead to each and every limitation

recited in claims 2-4, 11, and 45, without conceding the Examiner's assertions regarding claims 2-4, 11, and 45, Applicant submits that Agre, Kulka, Ito, and Fischer do not render claims 2-4, 11, and 45 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claims 2-4, 11, and 45 are in condition for allowance.

**c. Claim 16**

The Examiner rejected claim 16 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, Sohrabi, and Poor. Since claim 16 depends from claim 1, claim 16 necessarily includes each and every limitation recited in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended. Applicant submits that Sohrabi, and Poor fail to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, Sohrabi, and Poor do not reasonably lead to each and every limitation recited in claim 16, without conceding the Examiner's assertions regarding claim 16, Applicant submits that Agre, Kulka, Ito, Sohrabi, and Poor do not render claim 16 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claim 16 is in condition for allowance.

**d. Claims 20 and 21**

The Examiner rejected claims 20 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and Myer. Since each of claims 20 and 21 depends from claim 1, each of claims 20 and 21 necessarily includes each and every limitation recited in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended. Even though Myer discloses a control system comprising a master controller and at least one device coupled to the master controller via a network (*see*, e.g., Myer, abstract), Applicant submits that Myer fails to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, and Myer do not reasonably lead to each and every limitation recited in claims 20 and 21, without conceding the Examiner's assertions regarding claims 20 and 21, Applicant submits that Agre, Kulka, Ito, and Myer do not render claims 20 and 21 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claims 20 and 21 are in condition for allowance.

Additionally, under M.P.E.P. § 2142, the key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_, \_\_\_, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also KSR, 550 U.S. at \_\_\_, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). Applicant submits that the Examiner has not articulated any reasoning why a person having ordinary skill in the art at the time of

Applicant's invention would have combined Agre, Kulka, and Ito with Myer.

**e. Claim 24**

The Examiner rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and Davis. Since claim 24 depends from claim 1, claim 24 necessarily includes each and every limitation recited in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended. Even though Davis discloses systems have been developed that, upon user initiation, install software from a master computer to a slave computer, where both the master and slave are homogenous with respect to each other in that they have similar hardware and software components (*see, e.g.*, Davis, column 1, lines 66-67, and column 2, lines 1-3), Applicant submits that Davis fails to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, and Davis do not reasonably lead to each and every limitation recited in claim 24, without conceding the Examiner's assertions regarding claim 24, Applicant submits that Agre, Kulka, Ito, and Davis do not render claim 24 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claim 24 is in condition for allowance.

**f. Claim 30**

The Examiner rejected claim 30 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and Hayball. Since claim 30 depends from claim 1, claim 30 necessarily includes each and every limitation recited in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended. Applicant submits that Hayball fails to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, and Hayball do not reasonably lead to each and every limitation recited in claim 30, without conceding the Examiner's assertions regarding claim 30, Applicant submits that Agre, Kulka, Ito, and Hayball do not render claim 30 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claim 30 is in condition for allowance.

**g.       Claim 31**

The Examiner rejected claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, Hayball, and Sohrabi. Since claim 31 depends from claim 1, claim 31 necessarily includes each and every limitation recited in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended. Applicant submits that Hayball and Sohrabi fail to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, Hayball, and Sohrabi do not reasonably lead to each and every limitation recited in claim 31, without conceding the Examiner's assertions regarding claim 31, Applicant submits that Agre, Kulka, Ito, and Davis do not render claim 31 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claim 31 is in condition for allowance.

**h. Claim 33**

The Examiner rejected claim 33 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and Clare. Since claim 33 depends from claim 1, claim 33 necessarily includes each and every limitation recited in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended. Applicant submits that Clare fails to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, and Clare do not reasonably lead to each and every limitation recited in claim 33, without conceding the Examiner's assertions regarding claim 33, Applicant submits that Agre, Kulka, Ito, and Clare do not render claim 33 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claim 33 is in condition for allowance.

**i. Claims 34 and 36-38**

The Examiner rejected claims 34 and 36-38 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and LeBlanc. Since each of claims 34 and 36-38 depends from claim 1, each of claims 34 and 36-38 necessarily includes each and every limitation recited

in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended. Applicant submits that LeBlanc fails to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, and LeBlanc do not reasonably lead to each and every limitation recited in claims 34 and 36-38, without conceding the Examiner's assertions regarding claims 34 and 36-38, Applicant submits that Agre, Kulka, Ito, and LeBlanc do not render claims 34 and 36-38 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claims 34 and 36-38 are in condition for allowance.

#### **j. Claims 43 and 46**

The Examiner rejected claims 43 and 46 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and Mann. Since claims 43 and 46 depends from claim 1, claims 43 and 46 necessarily include each and every limitation recited in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as

amended. Applicant submits that Mann fails to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, and Mann do not reasonably lead to each and every limitation recited in claims 43 and 46, without conceding the Examiner's assertions regarding claims 43 and 46, Applicant submits that Agre, Kulka, Ito, and Mann do not render claims 43 and 46 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claims 43 and 46 are in condition for allowance.

**k. Claim 49**

The Examiner rejected claim 49 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Ito, and Henderson. Since claim 49 depends from claim 1, claim 49 necessarily includes each and every limitation recited in claim 1.

As stated above, Agre, Kulka, and Ito do not reasonably lead to a sensor node comprising a multiple-mode radio frequency modem operable in both a master mode and a slave mode, wherein while the modem operates in the master mode, the sensor node is configured to control a frequency hopping pattern for a given node remote from the sensor node, and wherein while the modem operates in the slave mode, the sensor node is configured to acquire and follow a frequency hopping pattern of a remote node operating as a master, as recited in claim 1, as amended. Applicant submits that Henderson fails to make up for this deficiency of Agre, Kulka, and Ito.

Since Agre, Kulka, Ito, and Henderson do not reasonably lead to each and every limitation recited in claim 49, without conceding the Examiner's assertions regarding claim 49, Applicant submits that Agre, Kulka, Ito, and Henderson do not render claim 49 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claim 49 is in condition for allowance.

## **I. Claims 50-52 and 60**

The Examiner rejected claims 50-52 and 60 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Fischer, and U.S. Patent No. 5,617,371 (Williams). Of these claims, claim 50 is independent. Applicant has amended claim 50 to include the limitations of claim 61. Applicant submits that Agre, Kulka, Fischer, and Williams do not reasonably lead to each and every limitation recited in claim 50, as amended.

Claim 50, as amended, now recites wherein the sensor node is configured to synchronize with the other node via radio frequency communications, and wherein synchronization of the sensor node and the other node allows the sensor node to compensate for wind when determining a range of the sensor node. These limitations were recited in claim 61, which the Examiner had objected to for being dependent upon a rejected base claim. The Examiner stated that claim 61 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. For claim 61, the base claim was claim 50 and the only intervening claim was claim 60.

Although Applicant did not amend claim 50 to include the limitations of intervening claim 60, Applicant submits that Agre, Kulka, Fischer, and Williams do not reasonably lead to a sensor node, wherein the sensor node is configured to synchronize with the other node via radio frequency communications, and wherein synchronization of the sensor node and the other node allows the sensor node to compensate for wind when determining a range of the sensor node, as recited in claim 50, as amended.

Since Agre, Kulka, Fischer, and Williams do not reasonably lead to each and every limitation recited in claim 50, Applicant submits that Agre, Kulka, Fischer, and Williams do not render claim 50 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claim 50 is

in condition for allowance.

Further, since each of claims 51, 52, and 60 depends from claim 50, each of claims 51, 52, and 60 necessarily includes each and every limitation recited in claim 50. Without conceding the Examiner's assertions regarding claims 51, 52, and 60, Applicant submits that Agre, Kulka, Fischer, and Williams do not render claims 51, 52, and 60 obvious under 35 U.S.C. § 103(a), and Applicant submits that claims 51, 52, and 60 are therefore in condition for allowance.

**m. Claim 53**

The Examiner rejected claim 53 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Fischer, Williams, and Walter. Since claim 53 depends from claim 50, claim 53 necessarily includes each and every limitation recited in claim 50.

As stated above, Agre, Kulka, Fischer, and Williams do not reasonably lead to a sensor node, wherein the sensor node is configured to synchronize with the other node via radio frequency communications, and wherein synchronization of the sensor node and the other node allows the sensor node to compensate for wind when determining a range of the sensor node, as recited in claim 50, as amended. Applicant submits that Walter fails to make up for this deficiency of Agre, Kulka, Fischer, and Williams.

Since Agre, Kulka, Fischer, Williams, and Walter do not reasonably lead to each and every limitation recited in claim 53, without conceding the Examiner's assertions regarding claim 53, Applicant submits that Agre, Kulka, Fischer, Williams, and Walter do not render claim 53 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claim 53 is in condition for allowance.

**n. Claims 57-59**

The Examiner rejected claims 57-59 under 35 U.S.C. § 103(a) as being unpatentable over Agre, Kulka, Fischer, Williams, and Petite. Since each of claims 57-59 depends from claim 50,

each of claims 57-59 necessarily includes each and every limitation recited in claim 50.

As stated above, Agre, Kulka, Fischer, and Williams do not reasonably lead to a sensor node, wherein the sensor node is configured to synchronize with the other node via radio frequency communications, and wherein synchronization of the sensor node and the other node allows the sensor node to compensate for wind when determining a range of the sensor node, as recited in claim 50, as amended. Applicant submits that Petite fails to make up for this deficiency of Agre, Kulka, Fischer, and Williams.

Since Agre, Kulka, Fischer, Williams, and Petite do not reasonably lead to each and every limitation recited in claims 57-59, without conceding the Examiner's assertions regarding claims 57-59, Applicant submits that Agre, Kulka, Fischer, Williams, and Petite do not render claims 57-59 obvious under 35 U.S.C. § 103(a). Therefore, Applicant submits that claims 57-59 are in condition for allowance.

## **5. Response to claim objections**

The Examiner stated claim 61 is objected to for being dependent upon a rejected base claim. Applicant has cancelled claim 61. Applicant submits that the objection of claim 61 is moot. Applicant respectfully requests that the Examiner withdraw the objection of claim 61.

## **6. Conclusion**

Applicant believes that all of the pending claims have been addressed in this response. However, failure to address a specific rejection or assertion made by the Examiner does not signify that Applicant agrees with or concedes that rejection or assertion.

For the foregoing reasons, Applicant submits that claims 1-4, 9-14, 16, 18, 20-24, 27-38, 40, 41, 43, and 45-53, and 56-60 are in condition for allowance. Therefore, Applicant respectfully requests favorable reconsideration and allowance of all the pending claims.

Respectfully submitted,

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